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RADIOACTIVE ISOLATION CONSORTIUM, LLC

708 East Broad Street, Falls Church, Virginia 22046-3610
TELEPHONE: (703) 241-8711 FAX: (703) 241-8714 www.ricllc.com

July 12, 2004

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CHAIRMAN REC'D

The Honorable Spencer Abraham
Secretary of Energy
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Secretary Abraham:

A carbon fiber/graphite and alumina container designed by the Radioactive Isolation Consortium, LLC could potentially isolate waste and spent fuel in the Yucca Mountain repository for millions of years, well beyond the 10,000 year standard set aside by the recent decision of the U.S. Court of Appeals for the District of Columbia. The Radioactive Isolation Consortium invites your attention to its technology for isolating high level waste and spent fuel from the biosphere. We recommend that our company's technology be considered as an alternative for disposing of the Nation's high level radioactive waste and spent fuel and would appreciate the opportunity to brief you on this container system.

The RIC container system eliminates the chromium and other environmental contaminants in stainless steel and is very long lived.

The RIC container has the following potential environmental advantages over the current system:

- It is chemically inert. The alumina and graphite are in their final chemical state. Graphite deposits in nature have remained the same over geologic epochs.
- It is corrosion proof. The sealed multi-layer container is water impermeable over a very long time period, projected to be in the millions of years.
- The container is designed for inductive heating and solidifies stored wastes such as those at Hanford, INEEL and Savannah River by vitrification in the container. This vitrification-in-the-final-storage container process is inherently safer (no pour) and more reliable (the crucible/container is a one time use container) than the baseline process.
- The RIC container can also be used for spent fuel assemblies. In this mode, the spent fuel assembly would be loaded into the container and then surrounded with encapsulating materials.
- Detailed cost studies on the RIC container have shown that for Defense wastes the system would save many billions of dollars over the current baseline DOE vitrification program. A cost study has *not* been carried out for disposal of spent fuel but a study may confirm substantial cost savings for the storage of spent fuel over the remaining baseline testing and monitoring program.

We are a small business with unique and innovative proprietary technology and seek a sole-source award for testing this container in parallel with the Government's deliberations on the Court's decision. This letter has also been sent to the Administrator, EPA; the Chairman, NRC; and the Chairmen of the House and Senate Energy committees of jurisdiction.

We would like to help on this issue.

James C. Jordan

James C. Jordan, President

Argus Remediation, Inc.
Annapolis, MD

Burns and Roe Enterprises, Inc
Oradell, NJ

James C. Jordan
Falls Church, VA

James R. Powell, Ph.D
Shoreham, NY

Morris Reich, Ph.D
Kew Gardens Hills, NY

UCAR Carbon Company Inc
Clarksburg, WV

[illegible] Jr., Esq.
Oakton, VA

The New York Times
nytimes.com

July 10, 2004

Court Sets Back Federal Project on Atom Waste Site's Safety

By MATTHEW L. WALD

WASHINGTON, July 9 - The government's 17-year effort to bury nuclear waste at Yucca Mountain in Nevada suffered a major setback on Friday as the United States Court of Appeals for the District of Columbia said that the government's standards for protecting the public from radiation leaks at the repository, which extend 10,000 years, were too short, though it did not specify an appropriate period.

The Energy Department has spent about $9 billion on the repository, which would dispose of waste from civilian reactors and would give the government a place to store radioactive material left over from nuclear weapons production. The repository is also crucial to the nuclear power industry's hopes for new reactor construction after a 30-year drought. Failure to open Yucca Mountain would probably leave highly radioactive spent nuclear fuel in about 68 locations around the country, where civilian power reactors have operated.

The case had been brought by the State of Nevada and environmental groups, which oppose the repository.

In its 100-page decision, the three-judge panel rejected other arguments against the Yucca Mountain repository, including contentions that it was unconstitutional for Congress to force the project on an unwilling state. The appeals court said decisions by Congress and the Bush administration to single out Nevada were not subject to judicial appeal.

An appeal of the decision is possible, but both sides said the argument was more likely to move to Congress

In its ruling on Friday, the appeals court did not say how long the government should plan for protecting the public from leaks, but it cited a National Academy of Sciences report that said it was possible to predict the flow of leaks from a repository for up to a million years. The court ruled that a 1992 federal law that committed the country to burying the waste required the government to follow the advice of the National Academy.

But according to the government, Yucca Mountain cannot meet the radiation standard indefinitely. Documents prepared to help Yucca Mountain qualify under a 10,000-year standard show that by about 270,000 years after the waste is buried, an individual just outside the repository's fence would be subject to a radiation dose 60 times higher than the allowable limit. The academy had recommended setting a standard that covered the period when the radiation leaks were predicted to be the highest, in about 300,000 years.

Energy Secretary Spencer Abraham said his department would work with the Environmental Protection Agency and Congress "to determine appropriate steps" in light of the ruling. When the Energy Department loses a case in court, it often seeks to have Congress overturn the decision by amending the law. And the court even suggested that Congress could change the law to mandate a 10,000-year standard.

A lawyer at the Natural Resources Defense Council, Geoffrey Fettus, said that it might now be impossible for the Energy Department to argue that Yucca could function acceptably for hundreds of thousands of years. "They will have to contradict things they've already said in their earlier dose assessments," Mr. Fettus said.

The council, one of the plaintiffs, favors burying the waste. But Mr. Fettus said it remained to be seen whether it could be scientifically shown that Yucca was an appropriate site.

Congress picked Yucca as the lead candidate for the repository in a law passed in 1987. There is no back-up plan, because the same law bars consideration of any other site. In the absence of a national repository, the default solution is that as reactors around the country will build giant steel-and-concrete casks for storage. More than a dozen reactor complexes have

done so already and many more are planned. The Nuclear Regulatory Commission plans a public information session on July 15 at Indian Point, near New York City, for example, on the construction of casks there.

The estimates of how long Yucca can exist without radiation leaks are based on several factors, including how long the metal containers holding the waste would stay intact, and how fast radioactive materials would be carried through the soil by underground water flows. A decision to measure the repository against a 300,000-year rule, or a million-year rule, would switch the focus to characteristics of the rock, experts said.

Michael A. Bauser, associate general counsel of the Nuclear Energy Institute, the trade group of reactor operators, called the court's decision a victory for his side because it "validated the overall process that led to the recommendation and selection of Yucca Mountain."

Mr. Bauser said the industry and the government could ask for a rehearing, ask the Supreme Court to take the case, or seek help in Congress. Making predictions beyond 10,000 years was harder, he said. "Uncertainties clearly increase with greater periods of time," he said.

Mr. Bauser's group had argued that the government's rules were too restrictive. The Environmental Protection Agency sets a maximum permissible radiation dose for people outside the boundary of the Yucca project, and set a second standard for the maximum dose that they could receive through contamination of well water. The industry said that there was no basis for a separate water standard, but the court disagreed.

Over the long term, rainwater percolating through the mountain and then flowing underground to wells is the most likely way that the public would be exposed. Because nuclear waste breaks down over time, eventually becoming harmless, predicting doses requires calculating the rate at which different radioactive materials will decay and how fast each would flow through the dirt.

Nuclear materials are measured according to their "half life," or the time it takes for half the radiation to die away. Half lives for the isotopes reaching Yucca vary from decades to millions of years, time periods that the judges called "beyond human comprehension."

The decision also gave Nevada the right to challenge the Environmental Impact Statement done by the Energy Department. Nevada wants to argue that the department gave insufficient attention to one of the alternatives, leaving the waste where it is, mostly in the spent fuel pools of nuclear reactors or in concrete casks nearby. Nevada also wants to challenge government estimates of the environmental impact of transporting the waste.

At the very least, the decision makes it even less likely that the Energy Department can stick to its schedule of 2010 to begin accepting waste at the site, on the edge of the Nevada Test Site northwest of Las Vegas, where the department and its predecessor agencies tested nuclear bombs for decades. The department was planning to file an application for a license later this year, with another agency, the Nuclear Regulatory Commission, which is supposed to make a licensing decision using standards set by the E.P.A. The commission expected to begin hearings next spring, but the E.P.A. has been told to rewrite the rule.

The E.P.A. said when it set the 10,000 year standard that this was consistent with rules on other kinds of hazardous materials. It also said that anything longer would bring in factors that were hard to account for, like climate change that would make the Nevada desert much wetter.

But with the demise of the 10,000-year standard, a lawyer for Nevada, Joseph Egan, said, "As a practical matter, that means the licensing proceeding is completely on hold."

Even before Friday's decision, the 2010 date was regarded by people in the nuclear industry as highly suspect, because of the unprecedented nature of the legal proceedings that would be required before the commission could grant a license.

The $9 billion already spent by the Energy Department on the project has mostly been collected from nuclear utilities, which signed contracts to pay for waste disposal and the department faces lawsuits that may seek hundreds of millions of dollars in damages for the failure to keep its end of the deal.

Joseph Davis, a spokesman for the department, said that program managers would evaluate the impact of the decision on the

schedule. Nuclear power plant operators have avoided any short-term problem by installing steel-and-concrete casks to hold the waste, a solution likely to last for decades at least. The military waste that has been solidified in preparation for burial at Yucca is also stored in a form that would be suitable for decades as well.